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CLAIMS

1. A cell structure comprising:

a cell structural portion having partition walls  
5 forming a plurality of cells extending from one end face to  
the other end face, and

an outer wall portion disposed on an outer  
peripheral surface of the cell structural portion;

wherein the outer wall portion has at least a porous  
10 layer having a porosity of 40% or more or a porous layer  
having a hollow body.

2. A cell structure according to Claim 1, wherein the  
outer wall portion has an inside shell layer located on the  
15 cell structural portion side and an outside shell layer  
located outside of the inside shell layer with the inside  
shell layer having a porosity higher than that of the  
outside shell layer.

20 3. A cell structure according to Claim 1 or 2, wherein  
the cell structural portion contains a ceramic material or  
a metallic material as a main component, and the outer wall  
portion contains a ceramic material as a main component.

25 4. A cell structure according to any one of Claims 1 to 3,  
wherein the cell structural portion has a honeycomb  
structure or a foam-shaped structure.

5. A cell structure according to any one of Claims 1 to 4,

wherein the cell structural portion contains a material having adsorbability or catalytic capability.

6. A cell structure according to any one of Claims 1 to 5,  
5 wherein the outer wall portion contains a material having adsorbability or catalytic capability.

7. A cell structure according to any one of Claims 1 to 6,  
wherein the cell structural portion has a honeycomb  
10 structure, and at least a part of cells are plugged at an end portion.

8. A cell structure according to any one of Claims 1 to 7,  
wherein a catalyst is loaded on the inside of the cells  
15 and/or the inside of the partition walls.

9. A cell structure according to Claim 8, wherein the catalyst has a function of purifying automobile exhaust gas.

20 10. A method for manufacturing a cell structure, comprising the steps of:

forming a formed body including partition walls  
forming a plurality of cells,

firing the formed body to obtain a fired body,

25 and

disposing a coating material on a peripheral surface of the formed body or the fired body to form an outer wall portion;

wherein the coating material contains a pore former.

11. A method for manufacturing a cell structure according to Claim 10, wherein at least a part of the outer periphery of the formed body or the fired body is worked and removed  
5 before the step of forming the outer wall portion.

12. A method for manufacturing a cell structure according to Claim 11, wherein the step of working and removing at least a part of the outer periphery is conducted before the  
10 step of firing the formed body.

13. A method for manufacturing a cell structure according to Claim 11, wherein the step of working and removing at least a part of the outer periphery is conducted after the  
15 step of firing the formed body.

14. A method for manufacturing a cell structure according to any one of Claims 11 to 13, wherein, in the step of obtaining a formed body containing an outer wall unitarily  
20 joined with the partition walls in the step of obtaining a formed body and working and removing at least a part of the outer periphery, the outer periphery including the outer peripheral wall is worked and removed.

25 15. A method for manufacturing a cell structure according to Claim 10, wherein, in the step of obtaining a formed body, a formed body excluding the outer peripheral wall is obtained, and a coating material is disposed on the outer peripheral surface of the formed body or the fired body to

form the outer peripheral portion without working or removing the outer peripheral portion of the formed body and the fired body.

5 16. A method for manufacturing a cell structure according to any one of Claims 10 to 15, wherein the method includes the step of plugging at least a part of cells at an end portion.

10 17. A method for manufacturing a cell structure according to any one of Claims 10 to 16, wherein the pore former is one of carbon, a balloon, a foaming resin, a polyester resin, an acrylic resin, and a starch or a combination thereof.

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18. A method for manufacturing a cell structure according to any one of Claims 10 to 17, wherein the pore former has a hollow body.